

KBR:kbr 4/25/05 374397
PATENT

Attorney Reference Number 1011-57071-01
Application Number 09/919,650

REMARKS

The Applicants respectfully request reconsideration in view of the following remarks.

Claims 1-35 and 42-48 are pending. In the final Office action dated January 13, 2005 ["final Office action"], the Examiner rejected claims 1-35 and 42-48 as being unpatentable over selected pages of Marmel, Microsoft Project 2000 Bible ["Marmel"] in view of selected portions of Elliott, "An Introduction to Architectural Exploration" ["Elliott"]. The Applicants respectfully disagree.

I. Marmel

In the interest of reaching a shared understanding of the disclosure of Marmel, the Applicants make the following observations.

Marmel describes Gantt charts for project management. [See Marmel, pages 6-8.] A project includes tasks that have real-world durations and tasks that have zero duration (called "milestones"). [Id.] After a task is performed once, it is completed. [Marmel, pages 6-8, 16, and 17.]

The timing for the Marmel Gantt charts follows a single calendar line above all of the task bars. [See Marmel, Figures 1-1, 1-2, 1-3, 1-7, 9-10, 9-11, and 9-12.]

The Applicants understand the "8/27" and "9/3" shown in Figure 9-12 of Marmel to be *text fields* associated with task bars in the Gantt chart. Marmel indicates dialog boxes in a wizard "enable you to select other types of information to display, such as resources and dates on Gantt bars." [Marmel, page 264.] This indicates the "8/27" and "9/3" shown in Figure 9-12 are merely displayed information, not separate calendar lines and not separate timing features. Further, the Applicants submit herewith copies of various materials printed from the World Wide Web that describe text fields in Microsoft Project. The materials include: (a) Kennemer, "Put text where you need it on your Microsoft Project Gantt chart," 6 pages, www.techrepublic.com ["TechRepublic"]; and (b) Glen, "Microsoft Project: 4 – Manipulating the Data," 6 pages, online magazine TechTrax ["TechTrax"]. According to these materials, in Microsoft Project a task bar may have one or more text fields associated with it. [TechRepublic, pages 1-3; TechTrax, page 6.] A text field may display user-defined text or values of data fields associated with the task bar. [Id.] These materials also suggest that the "8/27" and "9/3" shown in Figure 9-12 are simply text fields, not separate calendar lines and not separate timing features. Rather, the timing for all of the tasks follows the single calendar line above the task bars in a Gantt chart.

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Marmel also describes features for progress tracking in Gantt charts. [Marmel, pages 16-17.] In particular, Marmel describes shading task bars to show percentage complete and presenting percentage figures next to task bars. [Marmel, Figure 1-7.]

II. The Examiner has improperly combined Marmel and Elliott.

In the final Office action, the Examiner writes, “the Marmel and Elliot references both teach Gantt charts, where Marmel shows independent timing features, and Elliot shows loop structures in the Gantt chart, where a combining of these features in a new Gantt chart would be an obvious modification.” [Final Office action, page 13.] The Applicants respectfully disagree.

Marmel does not teach or suggest “independent timing features” as the Examiner writes. In Marmel, the timing for a Gantt chart follows a single calendar line above all of the task bars. [See Section I.] The “8/27” and “9/3” in Figure 9-12 in Marmel are text fields associated with task bars in the Gantt chart [*id.*], not independent timing features.

In addition, the Examiner’s combination of Marmel and Elliott is improper for at least the following reasons. In rejecting claims 1-35 and 42-48, the Examiner modifies the Gantt charts in Marmel to include the “use of loops” as in Elliott. [Final Office action, pages 3, 6, and 9-11.] These modifications change several principles of operation of the Gantt charts in Marmel, and hence the Examiner’s modifications are improper. [See MPEP 2143.01, “THE PROPOSED MODIFICATION CANNOT CHANGE THE PRINCIPLE OF OPERATION OF A REFERENCE.”] These modifications also render the Gantt charts described in Marmel unsatisfactory for their intended purpose, which is another reason the Examiner’s modifications are improper. [See MPEP 2143.01, “THE PROPOSED MODIFICATION CANNOT RENDER THE PRIOR ART UNSATISFACTORY FOR ITS INTENDED PURPOSE.”]

The Marmel Gantt charts are for real-world project scheduling in which tasks are performed once and finished. [See, e.g., Marmel, page 7.] In contrast, loops in Elliott denote iteration or at least the potential for iteration (not just single-pass performance). [Elliott, Part III.] Modifying the Marmel Gantt charts to use loops as in Elliott changes a principle of operation of the Marmel Gantt charts, in that what is scheduled is iterative, not single-pass.

Similarly, in the Marmel Gantt charts, a task has a duration and is scheduled along a real-world timeline. [See, e.g., Marmel, pages 7-8.] The duration of a task, from start to finish, is shown against

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the timeline. [*Id.*] In contrast, the real-world duration of a loop typically depends on the number of iterations of the loop. [Elliott, Part III.] Modifying the Marmel Gantt charts to use loops as in Elliott renders the Marmel Gantt charts unsatisfactory for their intended purpose, in that loop timing per Elliott is inconsistent with the usual timelines in the Marmel Gantt charts.

Moreover, the Marmel Gantt charts organize tasks along a timeline with a scale of months and days (or potentially hours and minutes). In contrast, loops in Elliott are organized along cycles or control steps (not months, days, hours, minutes). [Elliott, Part III, 3.5.1.] Modifying the Marmel Gantt charts to use loops as in Elliott again changes a principle of operation of the Marmel Gantt charts. What is being timed in the Marmel Gantt charts and the loops in Elliott is different.

Claims 1-35 and 42-48 should be allowable.

III. Each of claims 1-12 and 42 recites language that Marmel and Elliott, taken separately or in combination, fail to teach or suggest.

A. Claim 1.

According to claim 1, a design tool displays in a Gantt chart a top-level schedule. The design tool also displays a first loop schedule for a first loop, and timing within the first loop schedule is presented relative to the first loop schedule. Specifically, claim 1 recites, "timing within the first loop schedule is presented relative to the first loop schedule." Marmel and Elliott, taken separately or in combination, fail to teach or suggest the above-cited language of claim 1.

In the final Office action, the Examiner writes:

[T]he examiner respectfully submits that Marmel teaches, on pages 263 and 264, the date labels of the Gantt chart, in figure 9-12 ("8/25", "10/14", "8/27", and "8/18") are not relative to the top level schedule, several of the labels match that as is in the top level schedule (such as "10/14"), but others are clearly showing a different time (such as "8/25", "8/27", and "8/18"). It is further noted on page 264, that dates are shown in Gantt bars.

[Final Office action, page 13.] The Applicants respectfully disagree.

As a threshold matter, the Applicants note that the Marmel Gantt charts cited by the Examiner relate to tasks that are performed once and then finished, according to a real-world calendar line. The tasks in the Marmel Gantt charts are not performed iteratively. Marmel thus leads away from the "loop

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schedule" and "loop" language recited in claim 1.

As to the "date labels" cited by the Examiner, the Applicants understand the "9/3" and "8/27" shown in Figure 9-12 to be text fields associated with task bars in the Gantt chart. Even if, for the sake of argument, the "9/3" and "8/27" are "dates ... shown in Gantt bars" [final Office action, pages 3 and 13], the date values are simply textual information displayed with the task bars. The timing of the tasks still follows the main calendar line. Having a single calendar line for different tasks in a Gantt chart (as in Marmel) leads away from "displaying a first loop schedule for a first loop, wherein timing within the first loop schedule is presented relative to the first loop schedule," as recited in claim 1.

Against the above-cited language of claim 1, the Examiner also cites the percentage complete feature shown in Marmel Figure 1-7." [Final Office action, pages 3 and 13.] The percentage complete feature of Figure 1-7 indicates actual progress towards completion for a task. The percentage complete feature provides status information entered by a manager or worker, not timing information. The task still follows the timing of the same single calendar line as the other tasks. This again leads away from the above-cited language of claim 1.

As for Elliott, Elliott describes a Gantt chart for a WHILE loop [Elliott, Part III Loops, Figure 10], but the timing shown for the WHILE loop is also the timing of the overall schedule. This leads away from the above-cited language of claim 1. Elliott also describes a Gantt chart for a single-level loop [Elliott, Part I, Introduction and Terminology, Section 6.3 and Figure below Section 6.3.], which again does not teach or suggest the above-cited language of claim 1.

Claim 1 should be allowable.

B. Dependent claims 2-12 and 42.

Claim 3 recites "each of the top-level schedule and the first loop schedule includes an independently numbered set of control steps," and claim 4 recites "the first loop schedule begins with a control step 0 for non-real operations of the first loop schedule that execute in a clock cycle for a control step of the top-level loop schedule." Claim 10 recites, "timing within the first loop is independent of the different lengths of the plural branches." As noted above, Marmel and Elliott do not teach or suggest, "timing within the first loop schedule is presented relative to the first loop schedule," as recited in claim 1. Marmel and Elliott, taken separately or in combination, are even further from teaching or suggesting the above-cited language of claims 3, 4, and 10, respectively.

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Claim 5 recites, "timing within the top-level schedule is presented as independent of latency of the first loop schedule." The Examiner alleges Marmel "teaches, in pages 50 and 51, elements containing an icon for displaying when the sub-elements are not expanded." [Final Office action, page 4.] Even if (for the sake of argument) this were true, "an icon for displaying when the sub-elements are not expanded" does not teach or suggest the above-cited language of claim 5. In fact, Marmel describes the durations of subtasks overriding and potentially changing the duration of a summary task [Marmel, pages 50-51], which leads away from the above-cited language of claim 5. Elliott also does not teach or suggest the above-cited language of claim 5.

Applicants will not belabor the merits of the separate patentability of the remaining dependent claims of claim 1.

Dependent claims 2-12 and 42 should be allowable.

IV. Each of claims 13-26 and 43-46 recites language that Marmel and Elliott, taken separately or in combination, fail to teach or suggest.

A. Claim 13.

According to claim 13, a design tool presents first information for a block of a design. The block includes a sub-block that includes a number of timing steps. The design tool also presents second information for the sub-block of the design, and timing within the block is presented as independent of the number of timing steps of the sub-block. Specifically, claim 13 recites, "presenting second information for the sub-block of the design, wherein timing within the block is presented as independent of the number of timing steps of the sub-block." Marmel and Elliott, taken separately or in combination, fail to teach or suggest the above-cited language of claim 13.

In the final Office action, the Examiner writes:

[T]he examiner respectfully submits that Marmel teaches a sub-block timing that is independent of the block timing, see Marmel pages 263 and 264, that teach date labels of the Gantt chart, in figure 9-12 ("8/25", "10/14", "8/27", and "8/18") not being relative to the top level schedule. Several of the labels match that as is in the top level schedule (such as "10/14"), but others are clearly showing a different time (such as "8/25", "8/27", and "8/18"). It is further noted on page 264, that dates are shown in Gantt bars.

[Final Office action, page 16.] The Applicants respectfully disagree.

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As to the "date labels" cited by the Examiner, the Applicants understand the "9/3" and "8/27" shown in Figure 9-12 to be text fields associated with task bars in the Gantt chart. Even if, for the sake of argument, the "9/3" and "8/27" are "dates ... shown in Gantt bars" [final Office action, pages 6 and 16], the date values are simply textual information displayed with the task bars. The tasks in Figure 9-12 follow the single calendar line above the task bars, and the timing according to the calendar line is the same for all of the tasks. Having a single calendar line for all tasks (as in Marmel) leads away from "presenting second information for the sub-block of the design, wherein timing within the block is presented as independent of the number of timing steps of the sub-block," as recited in claim 13.

As for Elliott, Elliott describes a Gantt chart for a WHILE loop [Elliott, Part III Loops, Figure 10], but the timing shown for the WHILE loop is also the timing of the overall schedule. This leads away from the above-cited language of claim 13. Elliott also describes a Gantt chart for a single-level loop [Elliott, Part I, Introduction and Terminology, Section 6.3 and Figure below Section 6.3.], which again does not teach or suggest the above-cited language of claim 13.

Claim 13 should be allowable.

B. Dependent claims 14-26 and 43-46.

Claim 18, as amended, recites, "the icon appears in a clock overhead space of a timing step of the block schedule." As noted above, Marmel and Elliott do not teach or suggest, "timing within the block is presented as independent of the number of timing steps of the sub-block," as recited in claim 13. Marmel and Elliott are even further from teaching or suggesting the above-cited language of claim 18.

Claim 19 recites, "timing within the sub-block is presented relative to the sub-block," and claim 20 recites, "each of the block and the sub-block includes an independently numbered set of control steps." Against claims 19 and 20, the Examiner cites Marmel, page 263. [Final Office action, page 7.] The "date labels" described with reference to Figure 9-12 in Marmel are simply textual information displayed with the task bars. The timing of the tasks still follows the main calendar line. Having a single calendar line for different tasks in a Gantt chart (as in Marmel) leads away from the above-cited language of claim 19. Marmel is even further from teaching or suggesting the above-cited language of claim 20. Elliott also fails to teach or suggest the above-cited language of claims 19 and 20, respectively.

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Applicants will not belabor the merits of the separate patentability of the remaining dependent claims of claim 13.

Dependent claims 14-26 and 43-46 should be allowable.

V. Each of claims 27-30, 47, and 48 recites language that Marmel and Elliott, taken separately or in combination, fail to teach or suggest.

A. Claim 27.

According to claim 27, a design tool presents plural nested schedules for a design. Each of the plural nested schedules includes a line of control step labels and one or more lines of schedule information including at least one operation icon. Specifically, claim 27 recites, "each of the plural nested schedules including: a line of control step labels." Marmel and Elliott, taken separately or in combination, fail to teach or suggest the above-cited language of claim 27.

In the final Office action, the Examiner writes:

With regard to claim 27, further including a line of control step labels, Marmel teaches, on pages 263 and 264, the date labels of the Gantt chart, in figure 9-12 ("8/25", "10/14", "8/27", and "8/18") are not relative to the top level schedule. It is further noted on page 264, that dates are shown in Gantt bars.

[Final Office action, page 9.] The Applicants respectfully disagree.

As to the "date labels" cited by the Examiner, the Applicants understand the "date labels" to be text fields associated with task bars in the Gantt chart. Even if, for the sake of argument, "dates are shown in Gantt bars" in Marmel [final Office action, page 16], the date values are simply textual information displayed with the task bars, not control step labels. Marmel does not teach or suggest "each of the plural nested schedules including: a line of control step labels," as recited in claim 27.

Elliott also does not teach or suggest "each of the plural nested schedules including: a line of control step labels," as recited in claim 27. Elliott describes a Gantt chart for a WHILE loop [Elliott, Part III Loops, Figure 10], but the timing shown for the WHILE loop is also the timing of the overall schedule. Elliott also describes a Gantt chart for a single-level loop [Elliott, Part I, Introduction and Terminology, Section 6.3 and Figure below Section 6.3.], which again does not teach or suggest the above-cited language of claim 27.

Claim 27 should be allowable.

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B. Dependent claims 28-30, 47, and 48

Claim 28 recites, "presentation of each of the plural nested schedules other than the top-level schedule is in a clock overhead space of a control step of the schedule enclosing the nested schedule." Marmel and Elliott do not teach or suggest the "line of control step labels" language recited in claim 27. Marmel and Elliott, taken separately or in combination, are even further from teaching or suggesting the above-cited language of claim 28.

Applicants will not belabor the merits of the separate patentability of the remaining dependent claims of claim 27.

Dependent claims 28-30, 47, and 48 should be allowable.

VI. Conclusion.

Claims 1-35 and 42-48 should be allowable. Such action is respectfully requested.

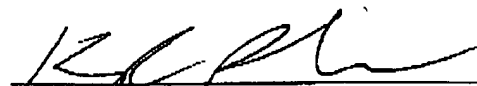
VII. Request for interview.

In view of the preceding remarks, the Applicants believe the application to be allowable. If any issues remain, however, the Examiner is formally requested to contact the undersigned attorney at (503) 226-7391 prior to issuance of the next communication in order to arrange a telephonic interview. This request is being submitted under MPEP § 713.01, which indicates that an interview may be arranged in advance by a written request.

Respectfully submitted,

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Takeaway:

Microsoft Project's Gantt chart has a number of visual tools you can use to help your staff stay informed. One particularly useful tool is the Bar Style feature, which can insert text exactly where you need it on your project's chart.

In Microsoft Project, the Gantt chart is the central tool you need to manage your project. Taking full advantage of the visual tools the chart offers can be a very powerful step in communicating complex information to your staff. The more accessible you can make the pertinent data on your chart, the better you'll keep everyone informed.

In this article, we will cover bar style text and how inserting text into your Gantt chart can communicate more information than you may have thought possible.

Concatenated text fields

One way to put more task or resource data on the Gantt chart is to use the Bar Styles text fields.

When reading large or complex Gantt charts it can be distracting to move your eyes back and forth from the Gantt bars to the table. By moving the data out onto the chart with the bars, users will be able to get value from the chart more quickly.

Figure A

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Figure B

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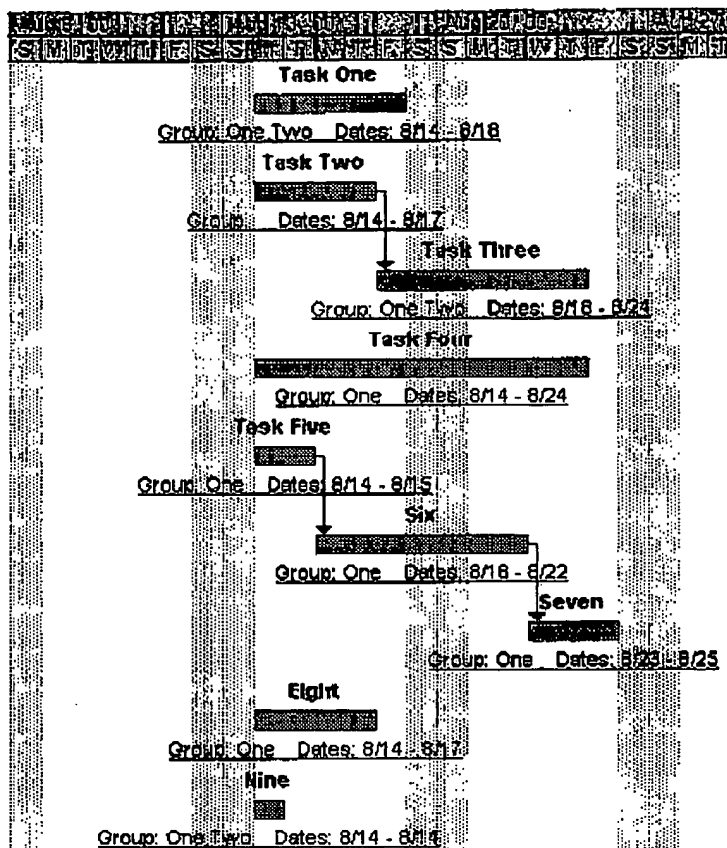
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2 Comments

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Sample chart enhanced with text



This allows the user to see more of the chart and less of the table. This method is especially useful when you print large charts onto paper.

Unfortunately, the Bar Styles feature allows only one text field to be placed in each position, limiting the data you can place on the chart. In Project 2000, however, there is a new feature called Custom Field Formulas that can be used to combine several fields into one.

Using this feature, we can display that one custom field in the bar style, which will effectively let us display many fields in the bar style text location, as shown in Figure B.

How it works

To display many fields in the bar style text location, first select Tools | Customize | Fields to open the Customize Fields dialog box shown below.

Figure C

The project management DON'T DO list

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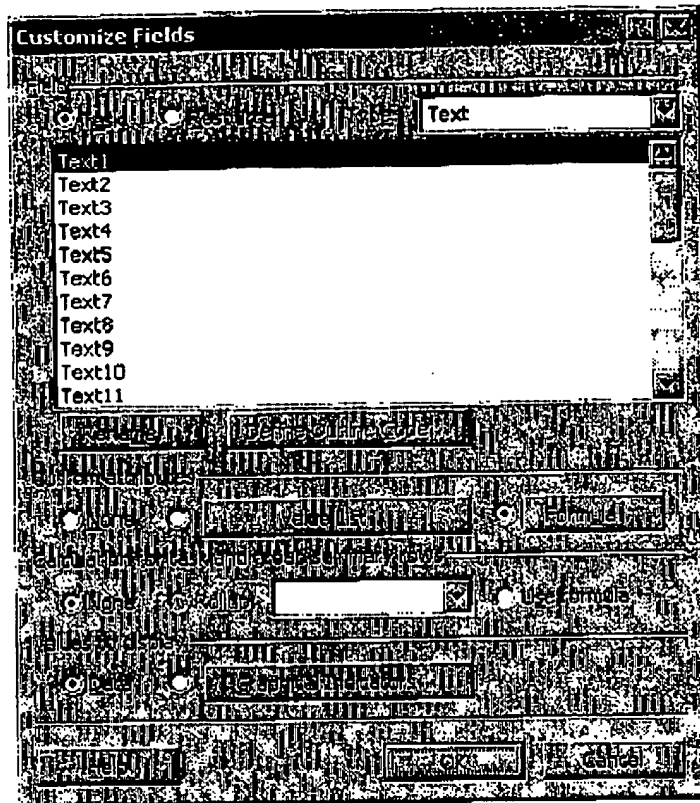
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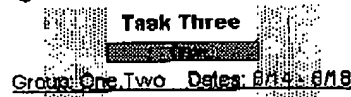
Put text where you need it on your Microsoft Project Gantt chart



Then, follow these steps:

1. Select Text from the Type combo box.
2. Choose the desired option from the list of 30 custom text fields.
3. Click on the Formula button to open the Formula dialog box.
4. Define the formula that will determine the value of this text field. As an example, create this formula:
"Group: " & [Resource Group] & " Dates: " & format([Start], "m/dd") & " - " & format([Finish], "m/dd")
5. Once you define the formula, insert it into the text position you want. **Figure D** shows our sample field inserted into the "bottom" position of a Gantt bar.

Figure D



Normally, we would have to use three positions to show the Resource Group, Start date, and Finish date. With this customized text field inserted into the bar style, we can put all that information in one position. Use this sample to build your own custom text fields.

To connect "strings" (text elements) in the formula, use the "&" symbol: For example, to show both the Text 2 field and the Text 3 field, the formula would read "[text2] & [text3]."

Use the Fields and Function buttons in the Formula dialog box: From these buttons you can pick from all the fields in Project and dozens of functions that can help you build all kinds of formulas.

Remember that the goal is to have the chart give as much info as possible while not making it too complex. Play around some with this new tool to find the way it will best work for your projects.

Post a comment to this article or, if you have a question for Brian, send him an e-mail. We can't guarantee that every letter will be answered, but Brian will read them all and then write articles based on the most common questions.

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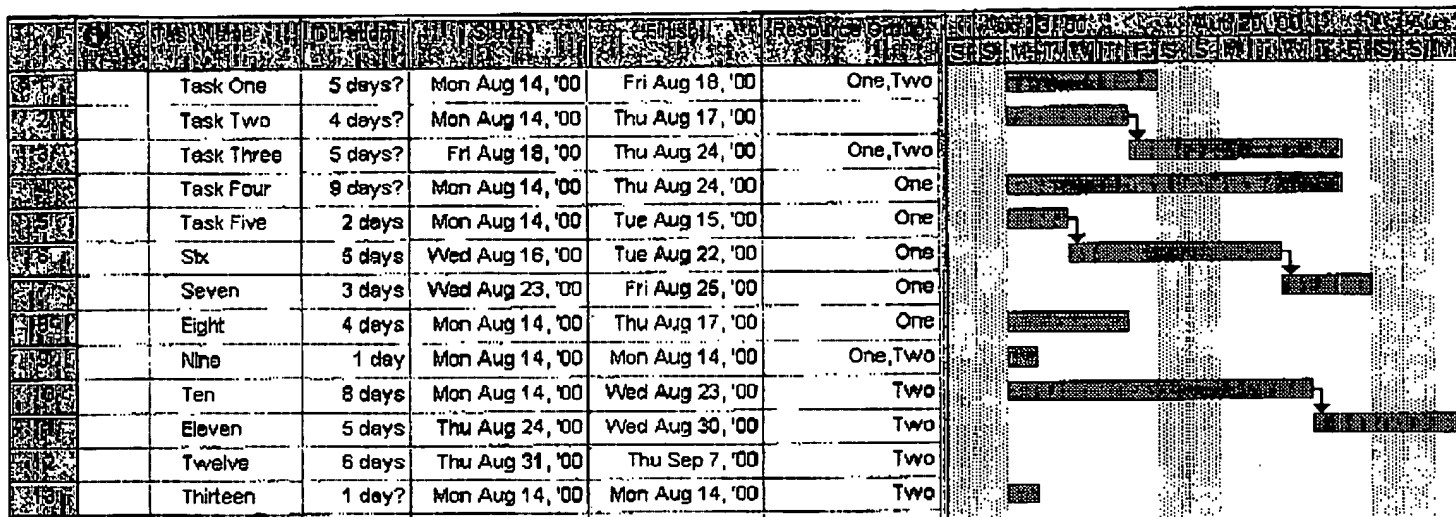
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Sample chart with normal bars





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Microsoft Office

Microsoft Project: 4 - Manipulating the Data

by Mike Glen, MVP

You should have by now entered all your Tasks, Durations and the logic that links the dependences. If you wish to see if your Network Diagram follows the principles in my introductory guide to network analysis at: <http://www.mvps.org/project/networkanalysis.htm>, go to View/Network Diagram (PERT Chart In Project 98). There you will see the boxes representing each Task and the logic linkages. Don't linger too long, I will be covering the Network Diagrams in a later lesson.

Back to the Gantt Chart View through View/Gantt Chart, or click the Gant Chart icon in the View bar, and we'll have a look at how you can manipulate the data you have entered so far. Like all Windows programs, there are often many ways to achieve the same end. I will include most of them, leaving you to decide which method suits you best.

Manipulating Data

Selecting Data

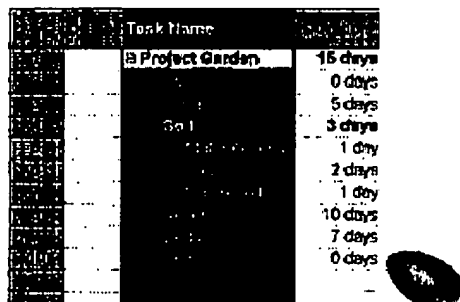
Again, like most Windows programs, you can click to select data, and click and drag to highlight adjacent data. Selecting one piece of data and Shift-click to another piece of data will select all in between. You can also use Ctrl-click to select non-contiguous data.

Selecting A Cell

Select data by clicking on the cell containing it and the selected cell will be highlighted with a black border.

Selecting A Column

Click on the column heading to select the column and all the cells in the whole column will be highlighted.

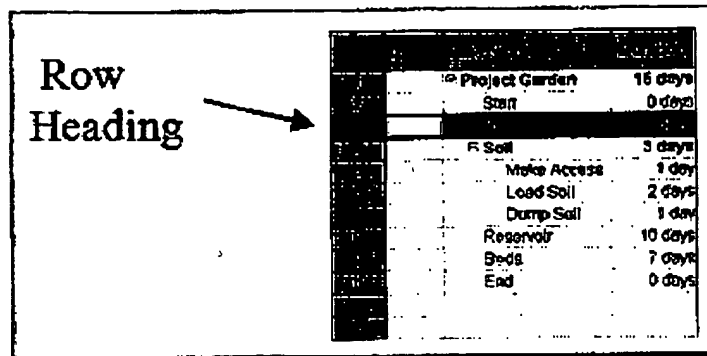


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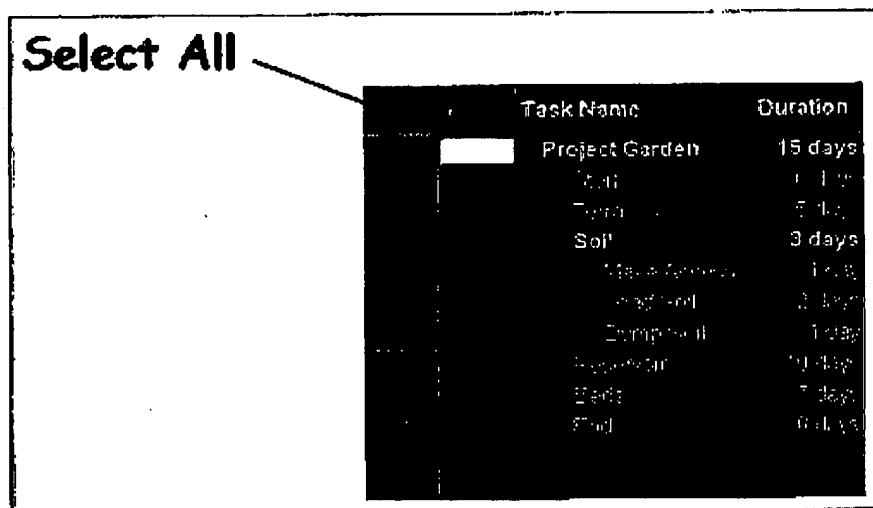
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Selecting A Row

Select all the data in a row (which includes all data fields in the record for that task) by clicking on the row heading, which is the cell holding the identification number (ID). All the selected row cells will be highlighted.

**Selecting All Rows And Columns**

To select all of the rows and columns in a sheet (for instance, when copying and pasting project data into another application) click the Select All button: the cell immediately above ID 1 and to the left of the column headings.

**Go To**

Sometimes the Gantt bar is not visible on screen. To make it visible, select **Edit/Go To....**, **Ctrl+G**, **F5** or select a task in the Gantt table and press the **Go To Selected Task** tool button.



This procedure will also work in other Views that show time scaled data.

Deleting Data

Very Important Note: If one or more cells are selected, pressing the Delete key will delete the entire selected rows, and all of the selected records will be lost (and you have only one chance to Undo). In Project 2002, only the cell(s) will be deleted and a Smart Tag will give you the final option of deleting the cell or the whole task.

Microsoft Project: 4 - Manipulating the Data**Rows**

Select the rows to be deleted. Press the **Delete** key, select **Delete Task** from the **Edit** menu, right-click and select **Delete**, or click on the **Cut** tool button. If you delete a summary task, all of its subtasks are deleted too. After you delete a task, Project will automatically renumber the remaining tasks.

Columns

Select the headings of the columns to be deleted. Press the **Delete** key, **Edit/Hide Column**, right-click and choose **Hide Column**, or you can click the boundary line between columns and drag to the left. In each case, the information is not lost, the data fields still exist and can be shown by re-inserting the column: i.e. the column information is simply hidden from view.

Cells

Select the cells to be deleted. Select **Edit/Cut(Cell)**, **Edit/Clear/Contents**, right-click and **Cut(Cell)**, right-click and **Clear Contents**, press **Ctrl+Delete** (Clear), **Shift+Delete** (cut), **Ctrl+X** (cut) or click the **Cut** tool button.



They can also be deleted individually from the *Entry Box* on the *Entry Bar*.

Moving Data

When moving data, whether it's within a project, between projects or to other applications like spreadsheets or documents, it is often easiest to cut and paste data fields rather than using click and drag.

Moving Rows

Select the row(s) by clicking the row heading(s) (the ID numbers) release the left button, then click again in the row heading and when you see a 4-way cursor, drag to the new position. A grey *T bar* will help you to find the desired position between two existing rows. Selecting a summary task will automatically include all its children as soon as you start to drag. It is often easier, therefore, to close down the summary by clicking the little minus sign before dragging and then clicking the plus sign to open it up again..

Moving Columns

Columns can be re-ordered using the drag and drop editing method in Project 2002. In earlier versions, to re-order columns, a new table must be defined, or you can insert a column in its new positions and delete the old one.

Copying Data

Select the rows, columns or cells to be copied. Select **Edit/Copy...** or right-click and select **Copy...**, or **Ctrl+C**, or click on the **Copy** button.



The selected fields will be copied to the Clipboard.

Click where the top left hand corner of the data is required to appear. Select **Edit/Paste** or right-click and select **Paste**, or **Ctrl+V** or click on the **Paste** tool button.

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Note! Data can only be copied to fields that are of like format, e.g. monetary data can only be copied to monetary fields.

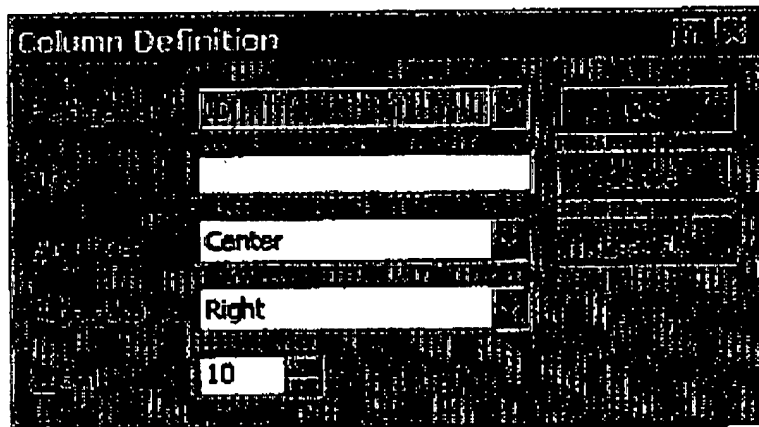
Inserting Rows and Columns

Inserting Rows

Select all or part of a row—the new row will be inserted above the selected row. Press the **Insert** key or select **Insert/New Task**. To insert more than one new row, press the **Insert** key the requisite number of times or select a set of rows and **Insert**—Project will insert the same number of empty rows as rows selected and renumber the rows that follow the inserted rows. Drag the row boundary in the row heading to change the individual row's height, however, in Project 98 such action will change the height of all rows.

Inserting Columns

Select all or part of a column—the new column is inserted to the left of the column selected. Select **Insert/Column...** or select a column heading and press the **Insert** key.



From the *Column Definition* dialog box, type the **Field Name** or click on the drop-down arrow, and select from the pick list. (Pressing the first letter will go to the first field beginning with that letter.) If required, type in a new **Title** and select the **Alignment** and **Width** or select **Best Fit**. After the column has been inserted, **dragging** the boundary line to the right of the column heading can change its width. A **double-click** when the right-left arrow appears will also obtain a best fit. Project 2002 also allows you to choose text wrapping in the heading.

Undo

If the changes are not required to be permanent, particularly to recover immediately deleted data, use the undo facility. Clicking the **Undo** tool button can reverse most actions.



Otherwise, use **Edit/Undo...** or **Ctrl+Z**.

Cut data is cut to the *Clipboard* where it can be recovered by **Edit/Undo Cut**, right-click and select **Paste** or by using the **Paste** tool button.

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**Spell Check**

Select **Tools/Spelling**, or press **F7**, or click on the **Spell Check** tool button.



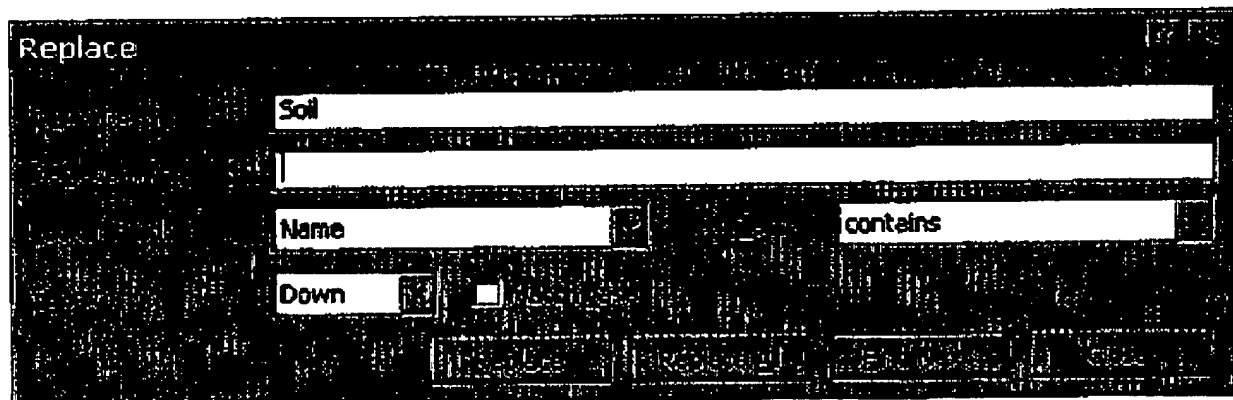
When the spell checker finds a word that is not in a dictionary, it displays the word in the *Spelling* dialog box. If the suggested correction in the *Change To* box is required, choose **Change** or **Change All**. To specify a different correction select a word from the *Suggestions* list or type the spelling wanted, then select **Change**. To skip a suggestion choose **Ignore** or **Ignore All**. Select **Add** to add the word to the custom dictionary. Click **OK** when Project displays the message: *Spell Check Complete*.

Auto Correct

Project uses the standard Windows **AutoCorrect** facility. **Tools/AutoCorrect...** will invoke the settings.

Find and Replace

Project's find and replace facility is invoked through the **Edit/Find (Ctrl+F)** or **Edit/Replace (Ctrl+H)**. Both bring up a dialog box where the text to be found is typed in the *Find what:* box. The *Look in field:* to be searched and the *Test:* to be applied can be selected from the pick lists. For the replace facility, in the *Replace* dialog box, insert the text in the *Replace with:* box. Project then finds the first occurrence of the text and gives the opportunity to **Replace** or **Replace All** or **Find Next**.

**Auto link**

A word of warning! Project has a default setting to automatically link tasks. When inserting a task, the links between the previous and subsequent tasks will be broken and re-set to the inserted task in a chain. Similarly, if a task is moved, the gap produced is re-linked with a finish to start relationship. With complicated logic diagrams, this can cause apparent havoc and you will need to re-examine all the connecting links to ensure Project has guessed correctly! It is my strong advice to turn off this facility in the defaults set up in **Tools/Options.../Schedule** tab: *Autolink inserted or moved tasks* before you even start to type in tasks.

Planning Wizards

Planning Wizards can aid many scheduling tasks, pointing out possible problems and prompting for clarification of ambiguous actions. Most Planning Wizards will appear automatically, but one special Wizard helps specifically with the Gantt Chart layout.

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Gantt Chart Wizard

Select **Format > Gantt Chart Wizard** or right-click the *Gantt Chart* and select **Gantt Chart Wizard** or click on the **Gantt Chart Wizard** tool button.



Follow the options on screen to customize the chart. For now, go as far as Step 2 and select the **Critical Path** radio button, **Finish/Format W/Exit Wizard**. You will now see the *Gantt Chart* with the **Critical Path** shown in red. Other options include the colour, pattern, size and end shape of the bars, milestones, and summary bars, type of link, display of text (e.g., Resource information or dates) to be associated with each bar, baseline and slack. More of this in a later lesson.

Next Month

A bit of a dry subject this month, but it clears the ground for getting the Gantt Chart correct with all the tasks in the best sequence and the correct logic links applied to show up the critical path. Next month we'll make a start at assigning resources.

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